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PRESCRIBED FIRE PROGRAM EVALUATION

PACIFIC SOUTHWEST REGION

Mike Rogers
Richard Harrell
Tom Fulk

April 1981

ATTACHMENT II

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Reply to: ~~5100 Fire Management~~ Date: May 21, 1981

Subject: Prescribed Fire Data Analysis

To: Forest Supervisors

The Prescribed Fire Activity Review scheduled for this spring was cancelled because new national and Regional policy was issued partially negating the value of such a review. The review may be reconsidered sometime in the future after Forests have implemented the new policy and have gained some experience with it.

In preparation for the review, Forest Supervisors were asked to provide information for advance study by the review team. Also, personnel selected by Forest Supervisors were asked to respond to a questionnaire. The enclosed report summarized the data received. It provides a good overview of the prescribed fire program in the Region as seen by field personnel.

Sufficient copies of the report are enclosed for Ranger District distribution. Please insure that all questionnaire respondents receive a personal copy of the report; their thoughtful, well considered replies are appreciated.

Robert W. Cermak
for ZANE G. SMITH, JR.
Regional Forester

Enclosures (10)

cc: Tom Fulk w/enclosures
Dick Harrell "
Mike Rogers "
R.F.

OFFICIAL GOVERNMENT

ATTACHMENT I

United States Department of Agriculture | Forest Service | Region 5

Reply to: 1410 Management Reviews

Date: January 21, 1981

Subject: Prescribed Fire Activity Review

To: Forest Supervisors

REPLY DUE FEBRUARY 23, 1981

A Prescribed Fire Activity Review has been scheduled for the Region during FY 1981. The review was developed to answer the following major issues:

--Management concern for activity safety and effectiveness.

--Management concern for prescribed fire escapes and consequences.

--Public interest generated by successes and failures in R-5 and elsewhere.

--Rapid increase in acres burned in last five years.

The following objectives will be met during the review:

--Determine extent of prescribed fire use in the Region, by objective categories, i.e., fuel management, timber management, range management, etc.

--Assess quality of the Region's prescribed fire program as a whole.

--Determine personnel qualifications and job requirements.

--Identify problem areas, opportunities for improvement, and propose alternative solutions.

--Review safety practices.

While the review team will only visit the Cleveland, Klamath, and Sierra Forests, it will be necessary to develop a comprehensive data base to identify concerns and opportunities which will form the basis of discussion on the sample Forests actually visited.

Will you please provide the following information.

1. Copies of Forest level direction (both manual supplements and memoranda with line officer signature) governing the planning, execution, and evaluation of all prescribed fire on your Forest.

2. Complete the attached Volume of Business Analysis for your Forest.

3. Select several people (3 or 4) from your Forest currently engaged in prescribed burning, preferrably mixed between Supervisor Office and Ranger District levels to answer the enclosed questionnaire. It is not necessary to identify the person answering the questions, but it would be valuable if the level were identified and how long the person has been envolved in prescribed burning.

Please send responses directly to Tom Fulk, Aviation and Fire Management Staff Regional Office, before February 23, 1981.

for Robert W. Cermak
ZANE G. SMITH, JR.
Regional Forester

Enclosures

cc: Tom Fulk, All W/enclosures
Dick Harrell, Eldorado N.F.
Mike Rogers, Angeles N.F.

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PRESCRIBED FIRE

VOLUME OF BUSINESS ANALYSIS

The following data is needed to determine the volume of prescribed fire business in the Region. It will be used to direct the activity review to areas of significant impact.

Please complete the blank spaces and forward to Thomas A. Fulk,U.S. Forest Service, 630 Sansome Street, San Francisco, California 94111.

	FISCAL YEAR							
OBJECTIVE	(PLANNED) 1981		1980		1979		1978	
	$	ACRES	$	ACRES	$	ACRES	$	ACRES
WILDLIFE								
TIMBER MGT.								
RANGE MGT.								
WATERSHED MGT.								
FUEL MGT.								
OTHER								
TOTALS								

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Prescribed Fire Questionnaire

Your Forest Supervisor has identified you for completion of the enclosed questionnaire. This information will be used to evaluate the Region's prescribed burning program, and your opinions can assist in this effort to improve the program. You do not have to sign your name to this material.

Organizational Level_____

1. What are the major strengths of your current prescribed fire program?
2. What are the major weaknesses etc.?
3. What do you see as the major opportunities for improvement?
4. How do you evaluate the quality of your prescribed burning program?
5. Do you have any other comments?
6. How long have you worked with prescribed fire? _____ years.

Please send responses by February 23 directly to:

Thomas Fulk
U.S. Forest Service
630 Sansome Street
San Francisco, California 94111

PRESCRIBED FIRE PROGRAM EVALUATION

PACIFIC SOUTHWEST REGION

I. INTRODUCTION

A. Background Information

This report presents supporting data, conclusions, and recommendations of an internal evaluation of the prescribed fire activity in the Pacific Southwest Region.

A review of the prescribed fire activity was scheduled for completion in Fiscal Year 1981. The review was unusual in that it was a review of this activity Region-wide to be conducted by a team of Region Five personnel. Team members were:

Tom Fulk, Assistant Director, Aviation and Fire Management Staff
Mike Rogers, Fire Management Officer, Angeles National Forest
Richard Harrell, Regional Fuels Management Specialist

Review objectives were:

1. Determine extent of prescribed fire use in the Region;

2. Evaluate program quality;

3. Evaluate personnel qualifications against job requirements;

4. Identify problem areas, opportunities for improvements, solutions to problems; and

5. Review safety practices.

Three separate review procedures were planned by the team to meet these objectives:

1. Collection and analysis of data from all Forests;

2. Use of a questionnaire to sample opinions of personnel; and

3. Field visits on three Forests to sample program execution, and obtain field personnel's viewpoints and suggestions. (Cleveland, Sierra, and Klamath).

The field aspects of the review were cancelled at the suggestions of two of the three participating Forest Supervisors. New national and Regional policies on prescribed fire use were issued in March 1981. Deferment of the activity review was suggested, pending implementation and experience with the new policy.

This report, then, covers only the analysis of data provided by Forests and the responses made by Forest personnel to the questionnaire. This provides a limited, but useful, sampling of opinions about the program.

B. Report Contents and Organization

This report is organized into five topic areas:

1. Summary of responses to questionnaires,
2. Brief analysis of Forest policies on prescribed fire,
3. Volume of business analysis,
4. Summary and Conclusions, and
5. Recommendations.

II. Questionnaire Responses

All Forest Supervisors in the Region were asked to select three or four people currently engaged in prescribed burning to answer a questionnaire (see Appendix Item I). Sampling of both Ranger District and Supervisor's Staff personnel was suggested. It was intended that the questionnaire be mailed directly to the Review Team.

The depth and quality of responses received were outstanding. Responses gave evidence of thoughtful consideration and commitment to improving program quality. The following table displays the number of responses received by position.

PRESCRIBED FIRE QUESTIONNAIRE

RESPONSES BY POSITION

District Fuel Management	17
D.F.M.O.	8
D.R.	5
District (Unspecified)	7
District Replies -	37
Forest Fire Staff	11
Forest Resource Staff	3
Forest Supervisor	1
Forest (Unspecified)	3
S.O. Replies -	18
Total Responses -	55

Data which follows summarizes the opinions expressed by these 55 respondents. Data is organized according to the questions presented on the questionnaire.

A. What are the major strengths of your current prescribed fire program?

1. Experienced personnel constitute the single biggest program strength. This item accounted for the greatest number of times an item was mentioned (27 responses). The following statements typify the comments received:

> "Our main strength lies in the number of well qualified personnel who desire to use prescribed fire as a tool."
>
> "The major strength of our program are those people on the Districts who have been able to combine their on-the-ground burning experience with all of the 'new' information, such as the use of the TI 59, Rothermel, Albini, etc."
>
> "...Experience and expertise of our burners."
>
> "...High skill level of people in the District prescribed burning program."

2. High interest and commitment levels on the part of those people involved in the various burning programs constituted the second most frequently mentioned item with 15 responses, followed by:

3. Strong cooperator and public support (12 responses).

4. Strong management support (12 responses).

5. Lots of long-range planning in the form of established EA's and project plans (9 responses).

6. Support from other functional resource areas (7 responses).

Respondents also mentioned a number of other strengths, many of which were unique to their situation.

B. What are the major weaknesses, etc.?

1. Insufficient numbers of trained and experienced personnel to safely accomplish the large job ahead of us turned up as the most frequently mentioned item (24 responses).

Typical comments follow:

> "There are not enough people in the field with the expertise to do prescribed fire in a large way at this point in time."
>
> "Ceilings and dollars limit the number of qualified personnel to accomplish all of the needed burning."
>
> "Personnel heading up and carrying out the actual on-the-ground burning are not sensitive to fire ecology and prescribed burning principles. They are trained primarily in fire suppression and concerned only with getting the fuels to burn and the project completed in the shortest time possible."

"Adequate time, training ceilings and dollars aren't available to train the number of burn bosses and lighters we are going to need to meet future targets."

"Too few people in the professional ranks with experience in the overall fuel management program, resulting in poor layout of cut blocks, etc."

"We need more formalized training in addition to M-350 and more practical experience opportunities, perhaps through details to other units."

2. Proposed national and Regional policy/direction is too restrictive (23 responses).

3. There is a definite need for improved interdisciplinary coordination to best maximize benefits (22 responses).

4. There is a lack of Regional Forest direction and objectives (19 responses).

5. The field would like to see much more applicable research data at the doing level (17 responses).

6. Instability and lack of sufficient funds to do the job (17 responses).

7. An insufficient number of days to conduct burning operations (16 responses).

8. Lack of top management commitment and management anxiety about escapes (12 responses).

9. A lack of good evaluation criteria to evaluate both simple and complex burns complete this list of most frequently mentioned weaknesses (12 responses).

Other weaknesses were mentioned but appeared less frequently.

C. What do you see as the major opportunities for improvement?

The most frequently voiced problems, that we have an insufficient number of trained, experienced personnel to carry out a satisfactory prescribed burning program, corresponded with the most frequently received recommendation that we (Region and Forests) provide more training (19 responses). The second most frequently voiced recommendation (17 responses) indicated that the Region and Forests should greatly expand our capability to effect information exchange and technology transfer at all levels.

Ten respondents felt that completed Land Management Plans and, indeed, the Land Management Planning process itself will aid the prescribed burning program. Seven recommendations suggested changes in silvicultural prescriptions where needed (primarily those practices dealing with fire as a silvicultural tool) and the same respondents identified the

need to increase utilization (both to facilitate fire use and to recover a valuable resource rather than burning it).

Six respondents suggested that pooling personnel resources was a good way to get the job done when no individual unit had adequate staffing and five respondents suggested that they be given more latitude for in-season burning when more personnel were available.

Three recommendations were received which suggested that increased I & E efforts (both Out-Service and In-Service) would result in greater support for prescribed fire use.

Additional comments recommended stricter qualification standards for prescribed burners, the need for better and more timely weather forecasts, some method of Region-wide contingency planning to provide back-up in the case of an escape and a plea to increase delegations to the District Ranger to approve burning plans.

D. How do you evaluate the quality of your prescribed burning program?

It was apparent from the wide range of answers received that the question was poorly worded. In general, however, respondents were satisfied with the overall quality of their efforts but were concerned with the quantity for a variety of reasons, some of which are enumerated above in B.

Almost universally, respondents were concerned about burn evaluation or follow-up (monitoring). Most said that it was seldom done and that it should be.

III. Forest Policy

Forest Supervisors were asked to provide copies of Forest Service Manual (FSM) supplements and policy memos. Five Forests have FSM supplements on prescribed fire which are currently in effect; also, the Angeles National Forest is in the process of issuing a supplement. Some Forest policy direction has been given in memo form.

Because new national and Regional policy was recently issued, Forests with existing policy will need to make revisions. Because of these impending changes, no analysis of Forest policy was conducted.

IV. Volume of Business

Volume of business data provided by 14 Forests is summarized in the four tables which follow. (Four Forests did not provide data). Several conclusions can be drawn from this data:

A. Expenditures for prescribed fire have followed a generally increasing trend for four years (Table 1).

B. Prescribed fire accomplishments have followed an increasing trend for four years (Table 2).

C. Fuel reduction accounts for greater expenditures than any other activity, but it is closely followed by timber management uses of prescribed fire (Table 3).

D. Accomplishments, in terms of acres treated with prescribed fire, are greater for timber management than any other activity (Table 4).

TABLE 1: PRESCRIBED FIRE EXPENDITURES

DOLLARS BY FY

(All Activities)

FOREST	FISCAL YEAR 1981	1980	1979	1978
Angeles	238,500	1,295,600	--	--
Cleveland*				
Eldorado	250,400	372,300	256,400	14,000
Inyo	22,057	12,000	7,000	7,000
Klamath	1,213,600	1,085,100	1,126,400	978
Lassen*				
Los Padres	252,000	260,000	115,000	30,120
Mendocino	170,600	161,215	174,275	146,400
Modoc	64,705	68,110	41,901	36,609
Six Rivers	297,285	270,975	186,075	225,900
Plumas*				
San Bernardino	11,900	13,750	--	--
Sequoia	168,662	221,788	161,224	187,000
Shasta-Trinity	802,704	785,931	415,837	274,681
Sierra*	--	--	--	--
Stanislaus	322,688	232,850	112,213	133,176
Tahoe	127,506	107,600	179,400	91,600
LTBMU	33,733	44,741	17,298	21,600
Total Dollars -	$3,976,385	$4,931,960	$2,793,023	$1,156,464

*Data not provided.

TABLE 2: PRESCRIBED FIRE ACCOMPLISHMENT

ACRES BY FY

(All Activities)

FOREST	FISCAL YEAR 1981	1980	1979	1978
Angeles	1,639	2,633	2,370	280
Cleveland*				
Eldorado	4,289	3,514	3,089	316
Inyo	2,268	1,120	768	768
Klamath	7,640	6,998	7,871	5,485
Lassen*				
Los Padres	7,800	7,841	2,452	602
Mendocino	6,806	4,813	6,755	5,100
Modoc	4,745	3,983	2,592	1,615
Six Rivers	3,693	3,631	2,481	3,762
Plumas*				
San Bernardino	155	124	*	*
Sequoia	5,591	6,568	4,820	5,708
Shasta-Trinity	12,556	13,185	6,555	6,071
Sierra	7,060	3,715	6,012	12,277
Stanislaus	5,349	5,278	2,692	3,396
Tahoe	2,578	2,234	4,567	2,290
LTBMU	630	890	269	76
Total Acres -	72,799	66,527	53,293	47,746

*Data not provided.

TABLE 3: PRESCRIBED FIRE EXPENDITURES

DOLLARS BY ACTIVITIES

ACTIVITY	FISCAL YEAR 1981	1980	1979	1978
Wildlife	95,130	151,499	103,505	68,585
Timber Mgmt.	1,069,168	1,200,579	777,913	574,792
Range Mgmt.	49,556	24,500	11,542	10,400
Watershed Mgmt.	50,400	22,246	55,195	30,000
Fuel Mgmt.	1,399,685	2,220,600	608,942	475,897
Other	113,510	232,618	112,050	9,370

TABLE 4: PRESCRIBED FIRE ACCOMPLISHMENTS

ACRES BY ACTIVITIES

	FISCAL YEAR			
ACTIVITY	1981	1980	1979	1978
Wildlife	8,805	39,419	6,977	8,540
Timber Mgmt.	28,817	28,266	23,967	20,426
Range Mgmt.	3,743	3,020	1,162	1,480
Watershed Mgmt.	4,200	1,493	3,665	2,000
Fuel Mgmt.	28,316	25,758	20,165	17,130
Other	2,883	2,780	4,126	170

V. Summary and Conclusions

Prescribed fire is an important resource management technique, resulting in significant expenditures and accomplishments each year.

Questionnaire responses received suggest a wide range of program implementation and understanding which suggests some Forests and Ranger Districts have aggressively moved forward with good management support while other units have held back, waiting for direction.

Field personnel on some units indicate that in some cases a high degree of anxiety related to the prescribed burning program, mainly the possibility of an escape, is adversely affecting the attitudes of field personnel.

This underlying fear by some managers may be responsible for the fact that technology transfer and information sharing does not occur on all units. The normal reasons given include the need to meet targets in other functional areas, personnel ceilings, budget reductions, etc. Some managers, however, have worked within these same limitations and have developed a strong, highly skilled and committed workforce.

Continuance of program excellence will depend entirely upon high quality training and opportunities to gain experience; however, personnel ceilings, travel constraints and decreasing budget levels will necessitate innovative and economical approaches. Some possible approaches will be covered under Recommendations.

Two kinds of training will continue to be needed at the ground level, on-the-job training and formal training. Personnel on those units with a strong program see their well trained and experienced personnel as their strongest asset.

There is a high level of commitment and interest by field personnel actively involved in the current prescribed burning program. These people exhibit a high degree of pride in their accomplishments.

The concern, thoughtfulness of expression, and quality content of many of the responses indicate to us that the Region's prescribed fire program is in good hands.

VI. Recommendations

Training

1. The Regional Office should conduct a prescribed fire training needs assessment to determine:

    a. The types of training needed.

    b. The amount of training needed.

    c. The appropriate level(s) to conduct that training.

    d. Efficient ways to conduct training.

    e. Predicted costs and benefit of training.

From that assessment, the Region should develop an appropriate training scenario involving all levels.

2. The Regional Office should work with the W.O. and the NWCG to develop a process whereby prescribed fire experience can be recognized in the NIFQS Red Card System.

3. In addition to formal training, it is recommended that the Region develop a process to facilitate information sharing and technology transfer. While each situation will undoubtedly require a somewhat different approach, at a minimum, the Region should investigate a number of alternatives, including:

a. The formation of a Tech-Transfer cadre that could visit field units (or groups of units) at specified times to keep practitioners current or when new technology is developed.

b. The issuance of some sort of News Notes on a regular basis with contributions from field, research, management, etc. in order to share information.

c. Formation of ad hoc cadres only for specific purposes (i.e., new developments).

d. The Region's role (if any) to facilitate and coordinate inter-Forest and inter-unit experience and training opportunities.

e. Region only train trainers who will take technology back to home unit.

B. Forest Supervisors and District Rangers should encourage participation by other units in their projects where opportunities exist for experience gaining and training and should encourage their own personnel to take advantage of similar opportunities on adjacent units.

C. Evaluation and Monitoring

Forest Supervisors should establish planning and project monitoring procedures to ensure that follow-up evaluation is performed using an interdisciplinary approach. Such evaluations should be documented and maintained in the project record for future reference. Forest Supervisors should determine the role (if any) of the Regional Office in coordination or standardizing such monitoring efforts and in developing uniform evaluation format or criteria.

D. Trust

There is a real need to develop a trust level between the Region and Forests and between the Forests and field personnel. They key to this trust is the fact that all personnel engaged in prescribed fire use will be supported in the event of some unplanned event when they have developed a good plan, are qualified to execute the plan, and are following the plan when the event occurs.

E. Budgeting and Planning

Line officers must make provisions for annual and continual commitments to develop fully qualified and adequately trained personnel. The alternatives to this commitment are reduced program accomplishments, reduced program quality, or higher failure rates.